A polarising issue: wild animals as food

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ABSTRACT

Using wild animals as food is controversial, but remains a widespread practice globally, and in some places wild meat is fundamental for food security. Hunting wild animals for food is widely unsustainable and in many places is driving alarming declines, particularly of large mammals. In general this occurs under governance regimes that fail to provide any practical incentives to users to limit their exploitation and develop sustainable management. However, use of wild species for food alongside other values can underpin successful models of robust and sustainable management - these depend on developing both clear incentives and adequate capacity to enable sustainable use. Even where such management regimes are in place, however, these can fall hostage to the vagaries of international animal protection campaigning efforts. This is explored through considering Inuit hunting of polar bear in Canada.

Key words: biodiversity conservation, sustainable use, food security, bushmeat, hunting, Inuit.

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Introduction

Eating wild animals as food – legally or illegally, as basic subsistence or an occasional addition – occurs in most countries and in every region on earth. In this paper I discuss the science, sustainability and politics of eating wild meat. In chewing over this topic, I reflect on the conservation significance of wild meat, and illustrate some of the complexities of the politics and policy surrounding wild meat use by highlighting Inuit use of polar bear for meat and income.

Wild meat: opportunity or threat for conservation?

While the vast bulk of the (terrestrial) meat eaten today by humans is from domesticated livestock, in some contexts wild meat[1] remains an important, and sometimes crucial, food source for millions of humans.

This is most obvious in the two great forest basins of the world - the Congo of Central Africa and the Amazon of South America. A rough estimate on 2010 figures calculated that approximately 4.6 million tonnes of wild meat is harvested per year in the Congo Basin, and approximately 1.3 million tonnes a year in the Amazon (Nasi and Van Vliet 2011). To put this in context, for the same year Australia consumed approximately 2.5 million tonnes of meat from all major sources (OECD 2017). While wild meat remains important in other areas, these great forests are probably the two regions of the world where the wild meat harvest is the most critical for peoples' survival, and for millions is the primary or only source of animal protein and of fat in their diets (Nasi *et al.* 2008, Nasi and Van Vliet 2011).

However, wild meat is not just a developing world issue. In Canada and the United States, for example, almost 16 million people participate in recreational hunting (many more in recreational fishing), and the harvest of wild meat for food is currently unquantified but likely to be extremely large (Conservation Visions 2016). Indigenous peoples in developed countries and regions such as North America and Australia often have a strong cultural preference for wild meat over domestic sources, and continue to pursue hunting practices and consume wild meat where available.

Like any human use of wild species, from a conservation perspective use for meat can be a threat or can be an opportunity, depending on prevailing ecological, governance, trade and market characteristics (Cooney *et al.* 2015). As a broad generality, wild meat use in the tropical forests is frequently unsustainable, and has driven or is currently driving severe species declines, particularly of large mammals (Ripple *et al.* 2016, Wilkie *et al.* 2016, Benitez-López *et al.* 2017). This is exacerbated, particularly in the Congo, by widespread commercial trade to urban centres and rapid human population growth (Nasi *et al.* 2008). The "empty forests" syndrome (Redford 1992) is a result of over-exploitation, largely for wild meat use, and this has important ecosystem ramifications beyond the target species themselves. For example, if predators – often caught by accident in the snares left for game species – or the species that are responsible for spreading certain seeds are removed, fundamental ecological processes may be affected (Nasi and Van Vliet 2011). Alternatives to this source of wild meat raise their own problems – replacing those millions of tonnes of wild meat with conventional livestock production would involve a vast area of forest clearance.

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[1] Here I use wild meat to mean meat from free-ranging, non-domesticated animals, that pursue natural behaviours of movement, feeding and reproduction without significant human care or aid.

However, under supportive conditions, the food value of wild species to people can underpin sustainable management systems and help provide the motivation for conserving wildlife resources and their habitat. Of course, food is not the only value - people across all cultures on earth hold a diverse and variable array of values for wild species – spiritual, cultural, livelihood, food, income, recreational, not least because people gain different benefits from different species. While use of wildlife for food can drive a "vicious cycle" of overexploitation, fuelling worsening declines, it can also underpin a "virtuous cycle" of sustainable use that leads to conservation and protection of the resource and its habitat. Under what circumstances does this happen? The work of Elinor Ostrom and her collaborators over many years has articulated key factors that shape the sustainability and robustness of management regimes for commons resources such as wild species (Dietz, Ostrom and Stern 2003, Ostrom 2009), and a huge literature on community wildlife management highlights many lessons (see e.g. (Kiss 1990, Hulme and Murphree 2001, Rihoy and Maguranyanga 2007, Roe, Nelson and Sandbrook 2009, Alcorn 2014). Key conditions concern governance of wildlife – which can broadly be defined as "who makes decisions and how". The existence of secure, enforceable, long term legal rights to use wildlife are particularly important - without these there is typically little incentive to steward and conserve wildlife resources. These rights must exist within a broader governance and management framework capable of detecting and responding to unsustainability of the use and ensuring illegal uses can be effectively countered.

These dynamics can be illustrated through examples – both good and bad. On the positive side, in the deep Amazon Basin at the border of Peru and Bolivia is the Takana indigenous territory, where the Takana indigenous people's claims to their ancestral lands have been legally recognised. They hold land tenure rights and have the rights to manage wildlife. Here they have a strong sense of ownership or stewardship, and a very strong incentive to look after that wildlife. They are working with supportive NGOs such as the Wildlife Conservation Society and monitoring and managing harvest of a number of key species, including peccaries, monkeys, and caiman, for meat for local use and some commercial sale of products such as skins. Evidence to date indicates those harvests are sustainable, as well as contributing to food and income needs (Painter, Wallace and Gómez 2006, Montoya 2013).

Another example of a well governed and sustainable wild meat harvest – this time at an enormous scale – is the USA and Canada. Here we are talking about recreational rather than livelihood hunting for meat – people are doing the hunting in their leisure time and have other sources of protein. Under well managed, science-based recreational hunting the populations of hunted species have soared over the last century in North America. They have gone from small and fragmented populations ravaged by unmanaged hunting for meat and the market, with extinctions looming, to in general healthy and abundant populations – even overabundant in some cases. Hunting for meat has played a critical role in these recoveries in a number of ways. Hunting organisations have played active roles in lobbying for conservation measures; financing and carrying out monitoring and reintroductions for many species; carrying out habitat restoration and management; and possibly most crucially, through a number of specific taxes and levies providing the lion's share of funding for state/provincial wildlife conservation and wildlife (see IJES 2013, IJES 2015).

A less favourable example is most of Central Africa. In most parts of most countries, indigenous and local traditional rights to hunt and manage wild resources have been removed by colonisation and the imposition of centralised state control, and this has been perpetuated by post-colonial governments (e.g. Walters *et al.* 2015). This means indigenous peoples and local communities have no individual or community stake in conserving wildlife (Bennett *et al.* 2007). They have no legal basis for excluding outsiders or motivation to restrict their own use – wild meat is effectively an open-access resource and its overexploitation follows the inevitable logic of the tragedy of the commons (Hardin 1968).

Wild meat on ice: hunting for food and income in the Canadian Arctic

I now turn to an example from the high north of the planet to illustrate some of the complex local dynamics around wild meat use – and the complex international politics - with reference to Inuit use of wild species, particularly polar bear. The circumpolar regions are another environment, like the tropical forest regions, where livestock farming is marginal or unviable and to this day people depend very heavily on wild meat harvests. Inuit traditionally rely on marine species such as seals and fish and also polar bears, known as *Nanuq*. Polar bears are an extremely culturally and spiritually important species to Inuit.

While polar bear populations are difficult to count, the global population consists of approximately 22,000-31,000 globally, plus the Arctic Basin population which has not been assessed (Wiig *et al.* 2015). 50-60% of the population is in the northern Canadian territory of Nunavut, in which the human population is mainly Inuit. The polar bear population at a national level appears to be reasonably stable, although there are potential questions regarding some subpopulations. Polar bear are threatened primarily by projected declines due to loss of habitat via melting sea ice caused by climate change (USFWS 2015, Wiig *et al.* 2015).

Inuit rights to conserve, manage and hunt wildlife, including polar bear, have been recognised in land claim agreements and are Constitutionally protected. The hunt is primarily for subsistence, with bear meat being shared within families and communities. Several hundred bears are hunted per year in Nunavut, primarily for food, although Inuit also use the by-products like the teeth and pelt. Polar bear are managed under co-management arrangements, in which Inuit play a strong formal role as equal partners with the government, and in which Inuit traditional knowledge (Joint Secretariat 2015) is integrated with conventional scientific knowledge into the management system to set quotas and establish other management measures (Freeman and Wenzel 2006, Shadbolt and Cooper 2012). A small proportion of the harvest is exported in the form of trophies or skins.

The value to people of wildlife as food can be linked to and embedded within a framework of other values that people hold for wildlife. Inuit polar bear hunting for food can also generate much-needed income, as well as continuing valued cultural traditions and embodying and building traditional knowledge. If an Inuit hunter secures a tag enabling him to hunt, he can choose to allocate this hunt to a tourist hunter – a trophy hunter who will pay them to act as a guide. The language of "trophy hunting" has been criticised as misleading, as hunters usually hunt not for the trophy but for the experience, with the trophy taken as a memento. Many authors refer to this hunting when carried out within a conservation framework as "conservation hunting" (e.g. Freeman and Wenzel 2006). However, the language of trophy hunting is used here for convenience. Inuit community members decide how to allocate the quota between subsistence hunts and trophy hunts – in either case, however, the same number of animals are hunted, and all meat is eaten locally (Freeman and Wenzel, 2006; Shadbolt et al., 2012).

Communities work with hunting outfitters who market hunts and liaise with tourist hunters, usually from Canada or the United States. Inuit guides lead all hunts. Transport is conducted in the traditional method with a dogsled, and the bear is tracked using traditional skills and methods. This generates considerable additional income for Inuit. Trophy hunting clients pay, depending on the length of the hunt and other factors, around US$20,000 – $50,000 to the outfitters, of which roughly half (US$10,000 – $25,000) enters local economies. Trade of the pelt can generate further income – a good pelt can fetch up to $6000 (Cooper 2015). This pays for schooling, fuel, and other necessities of life, and is highly significant in a region with very few economic opportunities, very high dependency on welfare, and high rates of suicide and alcoholism due to cultural disenfranchisement. Meat is shared with other community members in line with Inuit sharing culture (Foote and Wenzel, 2009; Shadbolt *et al.*, 2012).

A critical point here is that the tourist hunting uses the same quota as the harvest food – it is not additive. Trophy hunting does not constitute any additional threat to the species, but involves exactly the same animals that would be hunted for food.

In this case we have the cultural values, the food values and the income values of the polar bear embedded within a strong, collaborative governance framework which recognises the rights of indigenous people and provides them strong incentives and opportunities for participating in management.

However, science and sustainability intertwine with policy and politics in odd and not altogether harmonious ways. In 2008, the US Government listed polar bear as a threatened species under the *Endangered Species Act* (ESA) based on concerns regarding projected climate change impacts. An impact of the listing was that trade in polar bear trophies into the US became banned. While this had no impact on the number of bears hunted, it led to a major drop in the number of bear hunts allocated to trophy hunts, and corresponding drop in local income from hunting. While some Inuit have increased the trade of bear skins to generate income, there are pressures to curtail that option too. The US has twice proposed within the global *Convention on International Trade in Endangered Species of Wild Fauna and Flora* (CITES) to list polar bear in CITES Appendix I, meaning commercial international trade in polar bear specimens would be banned. I do not comment here on the technical justification for either listing, but it is notable that these moves to list polar bear have been highly vocally supported by animal protection organisations, which have publicly painted trophy hunting and trade in specimens as imperilling the polar bear.

There is an extraordinary irony in this situation, in which campaigns driven from one of the planet's greatest emitters of greenhouse gases, which has withdrawn from the Paris Climate Change Agreement, raise the threat of climate change as a reason to restrict hunting and trade of bear, thereby imposing the costs of conservation in the face of this threat on relatively poor people who have made virtually no contribution to it, despite the fact that the conservation measures involved will have no impact whatsoever on the level of harvest. There appears to be a breathtaking level of hypocrisy and injustice here. Inuit responses included the following:

> *"A big part of this uphill challenge that we face as an Indigenous people in the Arctic who depend upon Polar Bear and who are successfully managing Polar Bear, are well-funded animal and environmental protection organizations. They have chosen to compete against our management, our sustainable livelihoods, and our Indigenous rights in order to generate revenues and use these revenues to convince the public and decision-makers that the Polar Bear needs to be "saved" from extinction and protected from our people…" (Audla 2013).*

However, the proposals to list polar bear in Appendix have been rejected by CITES Parties. Subsequently the CITES Animals Committee reviewed trade in polar bear specimens and concluded that it posed no threat to polar bears (CITES 2015), a development welcomed by Inuit leaders.

Concluding remarks: key messages for "Eating Animals"

Wild meat is important to people. It is still important today to millions of people on earth, from the point of view of food security, livelihoods, culture and tradition. Wild meat use is currently often highly unsustainable, with the root problems lying in poor governance models and expanding demand. However, under supportive governance frameworks the values of wild meat to people can, in the right circumstances, be harnessed to support long-term, sustainable wildlife management and conservation. Food values are typically embedded within multiple cultural, spiritual and recreational values of wildlife to people, and conservation policies should recognise and support these values to contribute to management systems that build and harness local support for long-term conservation.

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